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**Jonathan Hauenstein\*** (hauenstein@nd.edu), 146 Hayes-Healy, Notre Dame, IN 46556, and **Tianran Chen, Alan Liddell, Dhagash Mehta** and **David Wales**. *Newton homotopies and applications*.

A Newton homotopy is a homotopy in which only the constant terms vary. Although the homotopies are simply constructed, they can be used in many applications with certifiable path tracking computations. This talk will explore some of these applications, including moving robots and solving PDEs, as well as mention results about the path tracking cost of Newton homotopies. (Received September 03, 2014)